

THE BECK DEPRESSION INVENTORY-SECOND EDITION (BDI-II): FACTOR CONGRUENCE AND GENERALIZABILITY OF ITS INDEXES OF INTERNAL CONSISTENCY

Jesús SANZ, María Paz GARCÍA-VERA

Abstract: *The Beck Depression Inventory II-second edition (BDI-II), is widely used new version of inventory for measuring depressive symptomatology in patients with psychological disorders and medical diseases and is also widely used in clinical practice and research activities. The goal of this research is firstly assessing the validity and internal consistency of the BDI-II on three samples of Spanish adults representing psychopathological patients, general population adults and university students. Secondly, comparing the BDI-II's factorial structure and reliability indexes in Spanish samples with the factorial structure and reliability indexes detected in similar samples from other countries in order to assess the BDI-II's factor congruence and the generalizability of its internal consistency indexes in several countries. Finally, the third goal was to compare the results achieved with the BDI-II with those obtained with the BDI-IA in order to find out whether the BDI-II presents higher indexes of factor congruence and internal consistency than the BDI-IA. Finally, the third goal was to compare the results achieved with the BDI-II with those obtained with the BDI-IA in order to find out whether the BDI-II presents higher indexes of factor congruence and internal consistency than the BDI-IA.*

Keywords: *Depression inventory, measuring of depressive symptomatology, mental health*

The Beck Depression Inventory (BDI) – both the 1961 original version (BDI-I; Beck, Ward, Mendelson, Mock & Erbaugh, 1961) and the 1978 revised version (BDI-IA; Beck, Rush, Shaw & Emery, 1979; Beck & Steer, 1993) – has been widely used for measuring depressive symptomatology in patients with psychological disorders, medical diseases and the population at large, to eventually become the tool for self-applied assessment of depression most widely used in clinical practice and research activities (Beck, Steer & Garbin, 1988; Piotrowski, 1996; Sanz, Navarro & Vázquez, 2003).

In 1996, a new version of the BDI named Beck Depression Inventory-II (BDI-II; Beck, Steer & Brown, 1996) was published, which included substantial changes to previous BDIs to enable the instrument to cover all symptomatic diagnostic criteria for depressive disorders proposed by the DSM-IV (APA, 1994). The BDI was developed in the sixties of the last century for the purpose of reflecting the clinical consensus on symptoms that were considered defining of depression at the time. During the forty years that have passed since, a number of relevant developments to our way of understanding depression have taken hold – developments that have been taken into account for the definition of major depression and dysthymia brought forward by the DSM-III (APA, 1980) and successive editions (DSM-III-R (APA, 1987) and DSM-IV (APA, 1994). Yet, despite these developments, the BDI-I, and later the BDI-IA, have continued to reflect the main characteristics of depression in a reasonable way. However, several studies have pointed out that the BDI fails to adapt to several symptomatic diagnostic criteria held by both DSM-III and DSM-IV (Moran & Lambert, 1983; Vázquez & Sanz, 1997; Vredenburg, Krames & Flett, 1985). Thus, in relation to the most widely accepted definition of major depressive episode offered by the DSM-IV (APA, 1994), the BDI-IA fails to cover the symptomatic criteria for psychomotor retardation or agitation, and only provides partially (paying attention only to deficit aspects and ignoring excess) for a further two criteria: sleep problems and appetite/weight problems (Vázquez & Sanz, 1997). In addition, the BDI-IA covers symptoms (e.g., hypochondria, hopelessness) that are not held as diagnostic criteria for major depressive episodes by the DSM (Burt & IsHak, 2002). Finally, the BDI-IA does not enable the assessment of the occurrence of depressive symptomatology during the minimum time required for diagnosis of major depressive episodes (two weeks as held by the DSM-IV as opposed to the one-week time framework offered by the BDI-IA).

To solve these discrepancies, the time framework of the BDI-II was extended to two weeks. Four BDI-IA items were replaced (weight loss, changes in body image, somatic distress, and work difficulty) by items covering new symptoms (agitation, worthlessness, concentration difficulty, and loss of energy). Also, appetite loss and sleep loss items were revised to assess both increases and decreases in sleep and appetite, and a further twelve items were reworded. Thus, only three BDI-IA items (Punishment feelings, suicidal thoughts, and loss of interest in sex) remain unaltered in the BDI-II. Therefore, the BDI-II stands as a major update of the popular BDI-IA, and appears to have succeeded in covering satisfactorily the DSM-IV's symptomatic diagnostic criteria for depressive disorders (see an analysis of content validity by Sanz, Navarro & Vázquez, 2003). Furthermore, psychometric studies to date indicate that this new version's reliability and validity indexes are as high as those of its immediate predecessor, the BDI-IA and, in some cases, clearly superior – such as, for example, in relation to its factorial validity and internal consistency (Beck, Steer, Ball & Ranieri, 1996; Beck, Steer & Brown, 1996; Dozois, Dobson & Ahnberg, 1998; Steer, Clark, Beck & Ranieri, 1999; Whisman, Perez & Ramel, 2000).

In this sense, the goal of this research is three-fold. First, assessing the validity and internal consistency of the BDI-II on three samples of Spanish adults representing psychopathological patients, general population adults and university students – which involves the analysis of factor congruence and generalizability of internal consistency

indexes in said three samples. Secondly, comparing the BDI-II's factorial structure and reliability indexes in Spanish samples with the factorial structure and reliability indexes detected in similar samples from other countries in order to assess the BDI-II's factor congruence and the generalizability of its internal consistency indexes in several countries. Finally, the third goal was to compare the results achieved with the BDI-II with those obtained with the BDI-IA in order to find out whether the BDI-II presents higher indexes of factor congruence and internal consistency than the BDI-IA.

Method

Participants

This research is based on data drawn from three samples, one clinical (psychopathological patients) and two non-clinical (general population and university students), used for the Spanish adaptation of the BDI-II (Sanz, Navarro & Vázquez, 2003; Sanz, Perdigón & Vázquez, 2003; Sanz, García-Vera, Espinosa, Fortún & Vázquez, 2005). The clinical sample included 305 outpatients (74.8% women) with several psychopathological diagnoses treated at Madrid Complutense University's (UCM) *Clinica Universitaria de Psicología* [University Psychology Clinic]. Patients were between 18 and 68 years of age, the average age being 31.8 years ($SD = 11.7$). Primary diagnosis included 43.3% of patients with anxiety disorders, 19.7% with digestive disorders, 6.9% with personality disorders, 5.6% with eating behaviour disorders, 4.3% with adaptation disorders, 3.3% with marital problems, and the remaining 17% with other psychological problems or disorders. The second sample included 470 adults (223 males and 247 females) selected from the general Spanish population, aged 18-92 (average age = 42.4; $SD = 17.9$). These individuals were recruited using the snowball technique, which involves asking a group of Psychology students to invite relatives and friends to participate in a research study on personality and schizotypy according to a set of criteria that would ensure sample stratification on the basis of age and gender. Even though such a sample is not randomly obtained, its demographic stratification was no different in terms of statistical significance from the demographic profile of the Autonomous Region of Madrid regarding the gender and age variables [$\chi^2(7, N = 470) = 5.44, n. s.$]. Finally, a sample of 590 university students (131 males and 459 females) aged 18-58 (average age = 21.9; $SD = 3.8$). The sample included Psychology (63.4%), Law (9.7%), Journalism (8.3%), Engineering (4.9%), and Health Science (5.3%) students enrolled in several Madrid universities – while the remaining 8.5% were studying other courses.

Procedure

The Spanish translation of the BDI-II involved three stages of development, including back translation and a pilot study of the user-friendliness and understandability of the BDI-II's instructions and items. The tasks involved in said stages were performed by four translators, three native Spanish and one native US, all of whom were expert psychologists in the field of depression. A more in-depth description of said stages is provided by Sanz, Navarro & Vázquez (2003). Participants in this research completed the BDI-II in several situations. Psychopathological patients completed it during the

individual assessment stage conducted by a clinical psychologist at the time of admission to the Clinic and which lasted an average of three sessions and was followed by a DSM-IV diagnosis. During this assessment, the BDI-II was provided along with other instruments adapted to the specific problems of each patient. Even though some patients completed further BDI-II tests throughout the therapy, only data gathered during the initial assessment were analysed. General Population group participants were provided the BDI-II, along with two other questionnaires on schizotypy that served the purposes of other research, by the same Psychology students who had invited them to collaborate in this research as part of the activities included in a voluntary seminar. In order to control any effects arising from the application of said instruments, four different booklets were arranged to ensure that the BDI-II preceded the questionnaires on schizotypy in half of them and followed them in the other half. Finally, university student sample participants complete a version of the BDI-II that included 25 items, 21 from the original BDI-II and four from the BDI-IA, which had been omitted and replaced by new items in the BDI-II. Said four items were printed on an additional sheet after the 21 items of the original BDI-II. The purpose of their inclusion was to check whether the decision to omit and replace them was appropriate for the Spanish population. Most students (72%) completed this version of the BDI-II individually. The remaining participants, all of whom were students of the UCM's Faculty of Psychology, were assessed in groups of 20–30 individuals as a part of the practical training activities corresponding to one of their course subjects.

Results and discussion

BDI-II factor congruence in Spanish samples

We conducted a principal-axis factorial analysis on the correlations between the 21 items of the BDI-II in each sample of participants. All analyses gave similar results. The initial extraction provided four factors with eigenvalues larger than 1. However, from the first factor, which explained 33.9%, 29.4% and 31.7% variance in samples of patients, general population and university students, respectively, the variance explained by the remaining factors was very small and tended to decrease asymptotically. In fact, a visual analysis of Cattell's scree test suggests the occurrence of one single depression factor in each sample. In addition, it can be observed in the factorial matrix of a single factor obtained in each sample (see Table 1) that, in general, most BDI-II's items saturated with values above 0.40 for said single factor, except the Punishment Feelings and Loss of Interest in Sex items in the patient sample, the Agitation, Loss of Interest in Sex, Suicidal Thoughts-Wishes, Punishment Feelings and Change in Appetite items in the general population sample, and the Change in Appetite and Loss of Interest in Sex items in the university student sample. Yet, all said exceptions displayed saturations of 0.35 or higher for this single factor.

Table 1. Factorial analysis of the Spanish adaptation of the BDI-II in several Spanish samples (adapted from Sanz, Navarro & Vázquez, 2003; Sanz, Perdigón & Vázquez, 2003; Sanz et al., 2005)

BDI-II items	Psychopathological patients (N = 305)			General population (N = 470)			University students (N = 590)		
	Single-factor solution *	Two-factor solution H		Single-factor solution *	Two-factor solution H		Single-factor solution *	Two-factor solution H	
		Factor 1	Factor 2		Factor 1	Factor 2		Factor 1	Factor 2
1. Sadness	0.66	0.48	0.22	0.58	0.55	0.08	0.62	0.48	0.19
2. Pessimism	0.53	0.31	0.26	0.55	0.37	0.23	0.48	0.41	0.11
3. Past failure	0.59	0.02	0.65	0.46	0.57	-0.07	0.5	0.61	-0.08
4. Loss of pleasure	0.60	0.58	0.05	0.55	0.00	0.60	0.53	0.14	0.45
5. Guilty feelings	0.47	-0.15	0.69	0.46	0.58	-0.08	0.54	0.59	-0.01
6. Punishment feelings	0.39	-0.01	0.44	0.36	0.52	-0.13	0.5	0.5	0.02
7. Self-dislike	0.62	0.12	0.57	0.55	0.54	0.06	0.64	0.69	-0.01
8. Self-criticalness	0.51	-0.05	0.61	0.44	0.55	-0.07	0.58	0.5	0.11
9. Suicidal thoughts or wishes	0.45	0.08	0.41	0.37	0.43	-0.03	0.44	0.47	-0.01
10. Crying	0.53	0.29	0.28	0.57	0.52	0.10	0.52	0.43	0.12
11. Agitation	0.45	0.51	-0.04	0.39	0.37	0.04	0.47	0.32	0.18
12. Loss of interest	0.60	0.51	0.13	0.58	0.11	0.52	0.54	0.08	0.52
13. Indecisiveness	0.64	0.31	0.37	0.57	0.37	0.25	0.54	0.52	0.04
14. Worthlessness	0.62	0.05	0.64	0.65	0.26	0.44	0.64	0.75	-0.07
15. Loss of energy	0.72	0.82	-0.05	0.62	-0.12	0.82	0.62	-0.01	0.72
16. Change in sleeping pattern	0.44	0.52	-0.05	0.40	0.05	0.39	0.42	-0.06	0.54
17. Irritability	0.56	0.48	0.12	0.53	0.48	0.09	0.57	0.32	0.29
18. Change in appetite	0.40	0.28	0.15	0.35	0.13	0.25	0.39	0.03	0.39
19. Concentration difficulty	0.64	0.49	0.19	0.56	0.18	0.43	0.57	0.31	0.3
20. Tiredness or fatigue	0.68	0.89	-0.16	0.59	-0.08	0.74	0.6	-0.09	0.79
21. Loss of interest in sex	0.35	0.38	-0.01	0.38	-0.18	0.61	0.38	0.04	0.38

Note. Factor saturations of 0.40 or higher are shown in bold. * Factorial matrix after extracting a single factor with the principal-axis method. H Matrix configuration after rotating, via promax oblique rotation, both factors extracted with the principal-axis method.

Most previous research studies with BDI-II involving clinical population (Beck, Steer & Brown, 1996; Cole et al., 2003; Steer, Ball, Ranieri & Beck, 1999), general population (Kojima et al., 2002) and university students (Beck, Steer & Brown, 1996; Dozois et al., 1998; Steer & Clark, 1997; Whisman, Pérez & Ramel, 2000), provided solutions with two factors either moderately or highly correlated with each other (for exceptions, see the three-factor solutions by Aasen, 2001; Al-Musawi, 2001; Buckley et al., 2001; Osman et al., 1998). Therefore, a second factorial principal-axis analysis was conducted for each sample by extracting two factors that were rotated by using an oblique procedure (*promax*). The resulting two-factor solutions (see Table 1) identified in all three samples a factor that was essentially defined by the Tiredness-fatigue, Loss of Energy, Loss of Interest in Sex, Loss of Interest and Change in Sleeping Pattern items, which appear to represent a Somatic/Motivational factor in line with the somatic dimension that was also identified in previous research studies with a wide range of samples (Beck, Steer y Brown, 1996; Cole et al., 2003; Dozois et al., 1998; Kojima et al., 2002; Steer & Clark, 1997; Steer et al., 1999, 2000), and a further factor that was configured principally by the Guilty Feelings, Past Failure, Self-Criticalness, Self-Dislike, Punishment Feelings and Suicidal Thoughts-Wishes items – which are essentially cognitive and, therefore, suggest that this extra factor represents the Cognitive factor that previous factorial studies had also identified in samples of patients, university students and general population adults (Beck, Steer & Brown, 1996; Cole et al., 2003; Dozois et al., 1998; Kojima et al., 2002; Steer & Clark, 1997; Steer et al., 1999, 2000).

In fact, a quantitative analysis of the congruence of the BDI-II's two-factor solutions in all three Spanish samples suggests a high level of correspondence between those solutions. Pearson's correlation coefficient between rotated factors was calculated for the purpose of quantifying said convergence. Cliff (1966) proposed a minimum correlation of 0.75 to claim that two factors have a similar interpretation. As shown on Table 2, the correlation coefficients resultant from comparing the factors obtained in the three Spanish samples with each other, exceeded the standard 0.75 in all cases.

Table 2. Factor congruence between the BDI-II's two-factor solutions found in Spanish samples (correlation between similar factors) (adapted from Sanz et al., 2005)

Sample	Sample		
	1	2	3
Somatic/motivational factor			
1. Psychopathological patients	1.00		
2. General population	0.77	1.00	
3. University students	0.87	0.81	1.00
Cognitive factor			
1. Psychopathological patients	1.00		
2. General population	0.75	1.00	
3. University students	0.89	0.84	1.00

Also in line with the aforementioned previous research studies, in all three Spanish samples both factors (Somatic-Motivational and Cognitive) appeared highly correlated with each other ($r = 0.72, 0.68$ and 0.71 for psychopathological patient, general population and university student samples, respectively), which provides increased support to the idea that the BDI-II measures a general dimension of depression that involves two highly-related symptomatic dimensions, one cognitive and the other somatic-motivational.

An analysis of Table 1 also suggests some differences between the factorial results obtained in different samples. While the Somatic-Motivational factor was the first and the Cognitive factor the second factor found in the psychopathological patient sample (which explained a 33.9% and 6.7% variance, respectively), the order of the factors in the general population and university student samples was reversed: the first factor found was the Cognitive factor (which explained a 29.4% and 31.7% variance in both samples, respectively), while the Somatic-Motivational factor was the second factor found (which explained a 7.4% and 6.6% variance in both samples, respectively). A second relevant difference had to do with the factors in which the BDI-II's affective items saturate (i.e., the items that reflects the affective symptoms of depression: sadness, irritability, crying). While in the psychopathological patient sample those items saturated in the Somatic/Motivational factor, in the general population and university student samples saturated in the Cognitive factor.

Factor congruence of the BDI-II in several countries: comparison of the BDI-II's factorial structure in Spanish samples with that of samples from other countries.

The factor congruence of the BDI-II's two-factor solutions was analysed using the correlation coefficient in comparison with the two-factor solutions obtained in other countries with similar samples and using identical factorial rotation (*promax* rotation). As Table 3 shows, when the two-factor solution of the Spanish sample of psychopathological patients was compared with the two-factor solutions obtained from US and Argentinean psychopathological patients, the resulting correlation coefficients exceeded the standard 0.75 in all cases. The standard 0.75 was also reached in 5 out of the 6 correlations between factors obtained with Canadian university students, and the remaining correlation was not far from said standard (0.70) (see Table 3). However, in general population samples, the correlation coefficients included in Table 3 revealed that the two-factor solution obtained in Spain converged with the two-factor solutions found in Norway and Japan (all $r \geq 0.75$), but failed to converge with those found in Italy and Argentina (all $r < 0.75$). In short, data on Table 3 suggest that both BDI-II factors found in Spanish samples correspond reasonably well with the cognitive and somatic-motivational factors found in previous studies, at least for psychopathological patients and university students, with less factor convergence in general population adults.

Table 3. Factor congruence between the BDI-II's two-factor solutions found in Spanish samples and those found in samples from other countries (correlation between similar factors)

Research study	Country	N	Correlation with the corresponding Spanish sample factor	
			Somatic/ motivational factor	Cognitive factor
Psychopathological patients				
Beck, Steer & Brown (1996)	USA	500	0.92	0.94
Steer et al. (1999)	USA	250	0.84	0.84
Steer et al. (2000)	USA	130	0.85	0.81
Brenlla & Rodríguez (2006)	Argentina	325	0.82	0.89
General population				
Aasen (2001) †	Norway	875	0.79	0.75
Kojima et al. (2002)	Japan	766	0.84	0.85
Montano & Flebus (2006)	Italy	574	0.59	0.68
Brenlla & Rodríguez (2006)	Argentina	207	0.55	0.63
University students				
Beck, Steer & Brown (1996)	Canada	120	0.80	0.85
Dozois et al. (1998)	Canada	1022	0.91	0.92
Steer & Clark (1997)	Canada	160	0.80	0.70

Note. † Factor solution calculated from Aasen's correlation matrix (2001, Appendix 3).

Generalizability of the BDI-II's indexes of internal consistency

The analysis of internal consistency of the BDI-II's 21 original items in Spanish samples revealed an alpha coefficient of 0.89 for both samples of psychopathological patients and university students, and of 0.87 for the general population sample. These indexes suggest that the BDI-II has excellent levels of internal consistency reliability in Spanish samples, as they all exceed the 0.80 standard (Nunnally, 1978). Furthermore, as it can be noted on Table 4, these indexes of internal consistency replicate those found in previous research studies conducted with similar samples in other countries. Specifically, in 25 samples of individuals assessed in such different countries as USA, Argentina, Norway, Japan, Italy, Canada and Bahrain (see Table 4), it can be estimated that the BDI-II's average alpha coefficients (weighted up with the number of participants in each sample) are 0.92, 0.87 and 0.88 for psychopathological patients, general population adults and university students, respectively, values that are either identical or very similar to those obtained from the respective Spanish samples.

Table 4. Psychometric properties of BDI-II in several studies featuring different samples of participants

Sample type / Research study	Sample characteristics				BDI-II properties		
	Country	<i>N</i>	% women	Mean age	Reliability (<i>alpha</i>)	Mean	<i>SD</i>
Psychopathological patients							
Beck, Steer & Brown (1996)	USA	500	63	37.2	0.92	22.4	12.7
Beck, Steer, Ball et al. (1996)	USA	140	67	37.6	0.91	22.4	11.9
Steer et al. (1997)	USA	210	60	41.3	0.92	24.4	13.3
Steer et al. (1998)	USA	840	66	42.2	0.92	23.8	12.7
Acton et al. (2001)	USA	205	68	41.0	n.d.	19.6	6.0
Sprinkle et al. (2002)	USA	137	58	22.0	n.d.	21.3	9.0
	USA	46	61	21.6	0.91	15.8	10.4
Steer et al. (2003)	USA	575	64	40.2	0.93	23.4	13.3
Brenlla & Rodríguez (2006)	Argentina	325	67.7	34.6	0.88	22.2	10.9
Previous research †	-	2978	64.6	38.5	0.92	22.8	11.9
Sanz et al. (2005)	Spain	305	74.8	31.8	0.89	22.1	11.5
General population							
Aasen (2001)	Norway	875	58.5	44.3	0.90	8.1	7.5
Hunt et al. (2003)	USA	115	52	36.5	n.d.	7.8	7.2
Kojima et al. (2002)	Japan	766	39.6	50	0.87	8.9	6.5
Montano & Flebus (2006)	Italy	574	52.6	31.8	0.86	8.1	6.4
Brenlla & Rodríguez (2006)	Argentina	472	51.7	33.3	0.86	10.1	7.5
Previous research †	-	2802	50.7	41.1	0.87	8.6	7.0
Sanz, Perdígón & Vázquez (2003)	Spain	470	52.6	42.4	0.87	9.4	7.7
University students							
Beck, Steer & Brown (1996)	Canada	120	56	20	0.92	12.6	9.9
Steer & Clark (1997)	Canada	160	67	19	0.89	11.9	8.1
O'Hara et al. (1998)	USA	152	52	20	n.d.	8.8	8.1
Dozois et al. (1998)	Canada	1022	67	21	0.91	9.1	7.6
Whisman et al. (2000)	USA	576	58	19	0.89	8.4	7.2
Aasen (2001)	Norway	303	70	21	0.86	7.1	6
Al-Musawi (2001)	Bahrain	200	63	23	0.84	13.4	6.7
Schulenberg & Yutrzenka (2001)	USA	90	78.3 ^c	22 ^c	0.88	8.8	6.8
Sica & Ghisi (2007)	Italy	723	52.6	21.3	0.80	8.2	5.6
Wiebe & Penley (2005)	USA	539	57.3	19.9	0.89	n.d.	n.d.
	USA	355	62.3	20.2	0.91	n.d.	n.d.
Carmody (2005)	USA	502	52.4	20.2	0.92	12.7	9.1
Previous research †	-	4742	60.2	20.5	0.88	9.6	7.3
Sanz, Navarro & Vázquez (2003)	Spain	590	78	22	0.89	9.2	7.5

Note. † Average value weighted according to the number of participants in each study. n.d. = no data.

Comparison between BDI-II and BDI-IA

Two pieces of data stand out when comparing the results obtained with the BDI-II in Spanish samples with the results obtained with the Spanish adaptation of the BDI-IA in similar samples (Vázquez & Sanz, 1997, 1999; Sanz & Vázquez, 1998). First, the internal consistency reliability of the BDI-II is higher than the BDI-IA's, at least for general population (0.87 vs. 0.83; Vázquez & Sanz, 1997) and university students (0.89 vs. 0.83; Sanz & Vázquez, 1998), featuring statistically significant differences in both according to the Feldt's test of the equality of two independent *alpha* coefficients (Alsawalmeh & Feldt, 1992) [$T(589.5, 600.38) = 1.31$ and $T(727.5, 1683.6) = 1.35$, respectively, both with $p < 0.001$] – even though no such superiority was detected in the psychopathological patient samples, as both BDI versions displayed a similar level of reliability in said samples (0.89 vs. 0.90; Vázquez & Sanz, 1999).

These results are consistent with the results obtained in previous studies. A recent meta-analysis of internal consistency coefficients for BDI estimated, on the basis of data drawn from 133 samples corresponding to a wide range of participants (e.g., university students, general population adults, medical patients, psychiatric patients) that the average internal consistency of the instrument was 0.85 for individuals aged 18–49, and 0.80 for individuals aged 50 and over (Yin & Fan, 2000)¹. In comparison, for the BDI-II, the weighted average *alpha* coefficient of the 28 samples of psychopathological patients, general population adults and university students shown on Table 4 (including the Spanish studies on which this chapter is based), totalling 11,887 individuals, was 0.89.

Secondly, the factorial results reveal a high congruence of the two-factor solution in all three Spanish samples, and also a high factor congruence of said solution with the two-factor solutions found in other countries with similar samples. This high congruence and, in general, the fact that the BDI-II shows a factorial structure formed by two dimensions (cognitive and somatic-motivational), which appear consistently in most studies featuring samples from different populations and countries, contrasts with factorial results normally obtained with the BDI-IA, in which consistency was the exception rather than the rule, featuring factorial solutions ranging between two and six factors and very little consistency for a population as well as between different populations (see the revision of factorial studies by Beck et al., 1988).

Conclusions

1. The Spanish version of the BDI-II presents appropriate indexes of factorial validity for Spanish adults in both clinical (psychopathological patients) and non-clinical samples (general population and university students).

1) At least 10 out of the 90 studies included in the meta-analysis used the brief version of the BDI-IA and two the BDI-II. However, the results of this meta-analysis can be considered as a good estimate of the average internal consistency of both BDI-I and BDI-IA, as most data was obtained with these two versions and, in addition, the variability of the internal consistency coefficients due to the type of BDI version used was minimal. Furthermore, the inclusion of the BDI-II in both studies (with alpha coefficients ranging between 0.89 and 0.92) would not support the defended conclusion: that the indexes of internal consistency of both BDI-I and BDI-IA are lower than those of the BDI-II.

2. In those three Spanish samples, the BDI-II's internal structure shows appropriate factor congruence, as a single-factor structure was found in all samples in which practically all items saturated and, compatibly, a structure with two highly-related factors (cognitive and somatic-motivational) which was also congruent between samples. Therefore, the BDI-II appears to measure in Spanish clinical and non-clinical samples a general dimension of depression that includes two highly-related symptomatic dimensions, one cognitive and another somatic-motivational.
3. The BDI-II's two-factor structure in Spanish samples is congruent with the two-factor structures found in similar samples in USA, Argentina, Norway, Japan, Italy and Canada, and more so in samples of psychopathological patients and university students, which supports the factor congruence of the BDI-II between countries.
4. The Spanish version of the BDI-II also presents appropriate indexes of internal consistency reliability in Spanish samples, including samples of psychopathological patients, adults of general population or university students, all of which exceeded the 0.80 standard.
5. The BDI-II's internal consistency reliability indexes in Spanish samples are generalizable to similar samples from such different countries as USA, Argentina, Norway, Japan, Italy, Canada and Bahrain. Thus, taking into account the results obtained in Spain and other countries, the BDI-II's average alpha coefficient can be estimated at 0.89.
6. In terms of both factorial validity and internal consistency reliability, and either taking into account only the results obtained in Spanish samples or taking into account the results obtained with samples from other countries, the BDI-II seems a better instrument for assessing depressive symptomatology than its predecessor, the BDI-IA, as (a) it obtains higher alpha coefficients; and (b) it presents a stronger factorial structure, as it better reflects a general dimension of depression, distinguishes more clearly two interrelated factors of cognitive and somatic-motivational symptomatology, and provides higher factorial congruence.

BECKŮV INVENTÁŘ DEPRESE – DRUHÉ VYDÁNÍ (BDI-II): KONGRUENCE FAKTORU A OBEČNÁ APLIKOVATELNOST JEHO UKAZATELŮ INTERNÍ KONZISTENCE

Abstrakt: Autor příspěvku pracuje s Bekovým inventářem deprese (dále jen BDI) a přibližuje, vyhodnocení validity a interní konzistence BDI-II na třech vzorcích dospělých Španělů, kteří reprezentují psychopatologické pacienty, běžnou populaci dospělých jedinců a vysokoškolské studenty. Zahrnuje tedy analýzu kongruence faktoru a obecnou aplikovatelnost ukazatelů interní konzistence u uvedených tří vzorků. Porovnává faktorovou strukturu a ukazatele spolehlivosti BDI-II u španělských vzorků a faktorovou strukturu a indexy spolehlivosti zjištěné u podobných vzorků z jiných zemí s cílem vyhodnotit kongruenci faktoru BDI-II a obecnou aplikovatelnost jeho ukazatelů

interní konzistenci v několika zemích. Porovnává výsledky dosažené pomocí BDI-II s výsledky, které byly získány pomocí BDI-IA, s cílem zjistit, zdali BDI-II představuje vyšší ukazatele kongruence faktorů a interní konzistence než BDI-IA.

Klíčová slova: Beckův inventář deprese, depresivní epizoda, agitace, spánek, chuť k jídlu, váha, hypochondrie, beznaděj, somatické obtíže, úzkostná porucha, psychopatologický pacient, konzistence, kongruence, faktorová analýza